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**Max Time : 1 hr** **Class = 11th Chemistry Test**  **Max Marks : 25**

**STRUCTURE OF ATOM – 1**

1. Multiple choice questions : [ 1 X 5 = 5]
2. Threshold energy is also called

|  |  |
| --- | --- |
| a) Work function | b) potential energy (PE) |
| c) kinetic energy (KE) | d) Sum of (PE) and (KE) |

1. Calculate the wavelength of a photon in Angstrom units having energy of one electron volt

|  |  |  |  |
| --- | --- | --- | --- |
| a) 12.42 X 103 Å | b) 1.242 X 103 Å | c) 124.2 Å | d) 156 Å |

1. What is the ratio between the energies of two radiations, one with a wavelength of 6000Å and other with 2000Å

|  |  |  |  |
| --- | --- | --- | --- |
| a) 3/1 | b) 2/3 | c) 1/3 | d) 3/2 |

1. Identify the pair which are not of isotopes

|  |  |  |  |
| --- | --- | --- | --- |
| a) 6X12 ,6Y13 | b) 17X35 ,17Y37 | c) 6X14 ,7Y14 | d) 4X8 ,4Y9 |

1. What is the energy, in joules, of a photon of IR light with wavelength 4.0 X 10 3 nm?

|  |  |  |  |
| --- | --- | --- | --- |
| a) 5.0 X 10-20 | b) 7.5 X 10-20 | c) 4.0 X 10-16 | d) 2.5 X 10-14 |

1. Explain Isodiapheres with example. [ 1 ]
2. Explain Isoelectronic with example. [ 1 ]
3. Explain Photoelectric effect. [ 2 ]
4. Write relation between : [ 2 ]

(a) Wave number and Frequency (b) Energy of photon and wavelength of light

1. The wavelength of a violet radiation is 3.7 x 105 pm. What is its frequency? [ 2 ]
2. Calculate and compare the energies of two radiations one with wavelength 800 pm and the other with wavelength 400 pm. [ 3 ]
3. The wavelength of blue light is 480 nm. Calculate the frequency and wave number of this light.

[ 3 ]

1. Calculate the wavelength of the spectral line obtained in the spectrum of Li2+ ion when the transition takes place between two levels whose sum is 4 and the difference is 2. [ 3 ]
2. Calculate the wavelength from the Balmer formula when n = 3. [ 3 ]